

Tennessee Comprehensive Assessment Program

Item Sampler

Grade 8



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Introduction

What is the TCAP Achievement Test?

The TCAP Achievement Test is a multiple-choice test designed to measure student achievement in certain skills in five subject areas: Reading, Language Arts, Mathematics, Science, and Social Studies. The sample questions in this On-Line Item Sampler are representative of the item types and item formats that will be used in the actual test, including those questions with art and without art.

What are the questions testing?

Questions are written to test student performance in State and national content areas. The State Content Standards and Performance Indicators were developed by the Tennessee Department of Education. These Standards and Performance Indicators are listed on the State Department of Education Web site at <http://www.state.tn.us/education/ci/cistandards.htm>.

Who will be tested?

All students in grades 3 through 8 will be tested.

How long will the tests take?

The length of the tests will vary, depending on the grade level. The time limits are generous and allow most students time to finish. Extended time limits apply for students using accommodations.

How do I use the sample questions?

These questions provide information for students, parents, and teachers about the TCAP Achievement Test. The questions in the On-Line Item Sampler are representative of most of the question types that will be on the TCAP Achievement Test.

These questions can be used as a classroom learning session or as an individual, short practice test to prepare students for the actual test. Item types with and without art are presented to better familiarize students with the actual test format.

An answer key for the sample questions is provided at the end of this On-Line Item Sampler.

How will the tests be scored?

The test answers will be machine scored. Results from the test provide information about how well students performed on the content being tested.

May calculators be used?

Calculators may be used on TCAP Achievement Grades 3–8 Mathematics subtests, Part 1 and Part 2. Calculators **may not** be used on any part of the K–2 test.

Which test accommodations may be used?

The Achievement Test may be administered using various procedures (or accommodations) that are used during the student’s daily educational program. Certain conditions must be met for students to be eligible for Special and English Language Learner Accommodations.

What are some tips for preparing students for the test?

Remind students to:

Relax: It is normal to be somewhat anxious before the test. Remember that the score is only one of a number of measures of performance.

Listen: Listen to and read the test directions carefully.

Plan Use of Time: First, answer all the questions you are sure about. Do not spend too much time on any one question. If a question seems to take too long, skip it and return to it later if you have extra time.

Pause and Think: If you are not sure how to answer a question, carefully read it again. Rule out answer choices that you know are incorrect and then choose from those that remain.

Reading and Language Arts



Directions Read the passage. Then answer Numbers 1 through 5.

What Is a Podcast?

A podcast is a recorded show (or “broadcast”) that is posted on the Web. It can be downloaded and played on an iPod® or a computer. Podcasts are sort of like radio shows designed for computers. The format of a podcast might be as simple as just one person speaking, or it can feature a whole team of people, replete with music, sound effects, and interviews.

Create Your Own Podcast

Podcasts let you tell the rest of the world whatever it is you want to say. To record a podcast, all you need is a computer and a microphone.

Most computers come with a built-in microphone, so it is possible to record podcasts with just a computer. However, we recommend using a plug-in microphone. These are relatively inexpensive, ranging from \$20 to \$30, and they make a big difference in sound quality.

Follow these steps to create your own podcast:

1. Find the program on your computer that allows you to record. If your computer does not have one, you can download a free recording program from the Internet.

The recording program gives you a chance to practice speaking into the microphone. You can also get used to hearing your recorded voice, and you can work on sounding natural as you’re recording.

2. Now you are ready to plan your first podcast. You’ll want to ask yourself some basic questions: What kind of show will I record? How long will the podcast last? Will I be presenting with someone else?

Helpful Hint: Go through the tutorials for the program and become familiar with how it works before trying to record your first podcast.

Podcaster Pro: “I had to learn to tilt the microphone at an angle from my mouth. This helped me not to pop my P’s.”
—Samantha M.

Podcaster Pro: “Listen to other podcasts that are similar to the one you would like to record. This will give you ideas about what you like and what you want to avoid.”
—Hector G.

3. Prepare notes to refer to as you record your podcast. Some people like to have a word-for-word script in front of them, while others prefer a general outline of what they plan to cover. Choose an approach that works for you.
4. Record your entire show. As for the content, there aren't any rules. However, you'll probably want to make sure that your recording is longer than five minutes and less than half an hour.
5. At this point, you should go back and edit out the "dead air," or quiet moments, that happen while you record. Editing keeps your podcast tightly paced. This is also when you might add a catchy jingle or a musical snippet to the beginning and end of your podcast.
6. Listen to your podcast all the way through. Are there changes you want to make before you "publish" it? What have you learned that will influence your next recording?

Helpful Hint: Remember to have some kind of introduction at the start of your show that identifies who you are and what your program is about. ("Hi, this is Roger K., and welcome to 'Tales from Troy,' the podcast about all things cool in America's coolest city!") At the end of the podcast, remember to have some kind of sign-off. ("That's it for this edition of 'Tales from Troy.' Thanks for listening, and join us next week as we continue the adventure!")

Podcaster Pro: "Unless it's a good interview, I try to keep all my podcast segments under five minutes long. This is in keeping with the listener's attention span as well as mine!"
—Shannon W.

Podcaster Pro: "I pick up a new tip with every podcast I record. At first, the whole process seemed intimidating, but now a lot of the steps are automatic, and my show gets a little better each time I record."
—Sun Y.

Podcast Possibilities

- Family: Share news with relatives who may live far away.
- Personal: Record your thoughts and observations about the world around you.
- Sports: Record game-to-game news about how the season is going.
- Music: Give news, clips, and reviews of your favorite artists.
- Homework: Ask your teacher if submitting certain projects via podcast is an option.
- Jokes: Spread the gift of humor.

Reporting Category: 2 Meaning

Performance Indicator: 8.1.spi.5 Identify an appropriate title to reinforce the main idea of a passage or paragraph.

1 Which of these would be the best title for the passage?

- A** Practice Makes Perfect!
- B** Keep It Short and Sweet!
- C** You, Too, Can Be a Podcaster Pro!
- D** What Kind of Podcast Will *You* Create?

Reporting Category: 7 Techniques and Skills

Performance Indicator: 8.1.spi.3 Locate information using available text features (e.g., maps, charts, graphics, indexes, glossaries, tables of contents, and appendices).

2 Which use for podcasting is not mentioned in the passage?

- F** sportscast
- G** scrapbook
- H** newsletter
- J** homework

Reporting Category: 1 Content

Performance Indicator: 8.1.spi.11 Determine the author’s purpose for writing or a student’s purpose for reading.

3 Why would a reader most likely read this passage?

- A** to learn a new skill
- B** to be entertained
- C** to experience great literature
- D** to understand computers better

Reporting Category: 7 Techniques and Skills

Performance Indicator: 8.2.spi.12 Identify individual written selections as technical, narrative, persuasive, and/or descriptive in mode.

4 The passage is an example of which mode of writing?

- F** narrative
- G** persuasive
- H** descriptive
- J** technical

Reporting Category: 4 Writing/Organization

Performance Indicator: 8.2.spi.15 Select illustrations, explanations, anecdotes, descriptions, and/or facts to support key ideas.

5 Which part of the passage illustrates what to include at the beginning of a podcast recording?

- A** “Podcast Possibilities”
- B** the “Helpful Hint” next to step 3
- C** Hector G.’s “Podcaster Pro” tip
- D** Sun Y.’s “Podcaster Pro” tip

Reporting Category: 6 Grammar Conventions

Performance Indicator: 8.3.spi.2 Recognize usage errors occurring within context (e.g., subject/verb agreement, pronoun case, double negatives, comparative/superlative forms, troublesome words: where, were; which, that; who, whom).

6 Which sentence is written correctly?

- F** Each of you are going to have a turn.
- G** Better communication is needed between he and I.
- H** Me and a friend of mine played tennis on Thursday.
- J** Send your e-mail address to Darren, Chandra, and me.

Reporting Category: 3 Vocabulary

Performance Indicator: 8.1.spi.20 Recognize commonly used foreign phrases (e.g., *bonjour*, *hasta la vista*, *bon voyage*, *mi casa es su casa*, *e pluribus unum*, *c'est la vie*).

7 Read these sentences.

“Bonjour, Madame,” said the guide. “Isn’t this a beautiful day? I hope you enjoy your tour of the city this morning.”

What does *bonjour* mean?

- A** “Good day.”
- B** “Watch out.”
- C** “Have a good trip.”
- D** “Watch your step.”

Reporting Category: 5 Writing Process

Performance Indicator: 8.2.spi.22 Select vivid words to strengthen a description (adjective or adverb) within a writing sample or a passage.

8 Which sentence best uses vivid words to strengthen a description?

- F** The very large centipede ran very rapidly across the gray sidewalk.
- G** Brett caught the ball without a problem and walked slowly off the court.
- H** May's azure eyes sparkled when a delicate snowflake settled on her nose.
- J** Brady's work was extremely careful, so he usually did quite well in school.

Mathematics



Reporting Category: 1 Number and Operations

Performance Indicator: 8.1.spi.5 Determine the square roots of perfect squares (< 169).

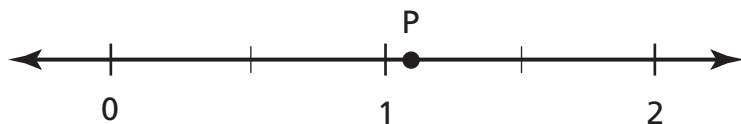
1 Kyle calculated the length of one side of a triangle to be $\sqrt{49}$ centimeters. What is another way to represent this length?

- A** 7 centimeters
- B** 49 centimeters
- C** 98 centimeters
- D** 2,401 centimeters

Reporting Category: 1 Number and Operations

Performance Indicator: 8.1.spi.4 Determine the approximate locations of rational numbers on a number line.

2 Look at point P on the number line below.



Which fraction best represents point P?

F $\frac{91}{100}$

G $\frac{109}{100}$

H $\frac{190}{100}$

J $\frac{290}{100}$

Reporting Category: 2 Algebraic Thinking

Performance Indicator: 8.2.spi.9 Formulate multi-step equations that represent relationships and real-world situations.

3 Jeremy rents a canoe for a one-time cost of \$30 and an additional cost of \$5 per hour. Which equation represents the total cost (C) for Jeremy to rent the canoe for h hours?

- A** $C = 30 + 5$
- B** $C = 30h + 5$
- C** $C = 30 + 5h$
- D** $C = (30 + 5)h$

Reporting Category: 2 Algebraic Thinking

Performance Indicator: 8.2.spi.6 Solve one- and two-step linear equations involving integers.

4 Solve for y :

$$4y - 6 = 54$$

- F** 12
- G** 15
- H** 192
- J** 240

Reporting Category:

3 Graphs and Graphing

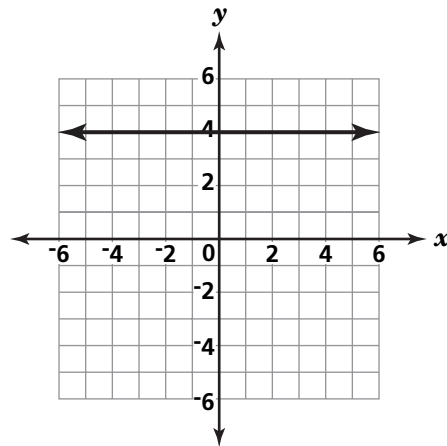
Performance Indicator:

8.2.spi.4 Connect symbolic expressions and graphs of lines.

5 Look at the graph.

What is the equation of the line on the graph?

- A** $y = 4$
- B** $y = 4x$
- C** $y = x - 4$
- D** $y = x + 4$



Reporting Category:

3 Graphs and Graphing

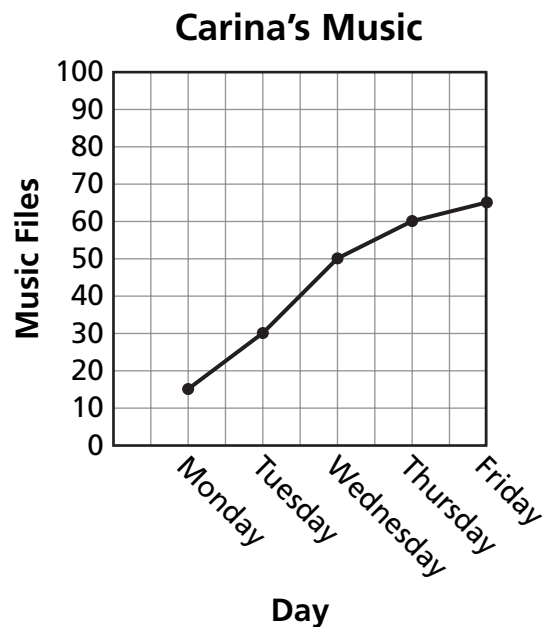
Performance Indicator:

8.2.spi.8 Interpret graphs that represent rates of change.

6 Carina downloaded songs to her new portable music player each day for five days. The line graph below shows the total number of songs Carina had on her music player at the end of each day.

On which day did she add the most songs?

- F** Tuesday
- G** Wednesday
- H** Thursday
- J** Friday



Reporting Category: 4 Real World Problem Solving

Performance Indicator: 8.1.spi.6 Work flexibly with fractions, decimals, and percents to solve one- and two-step word problems.

7 A trip between two cities on a standard train takes 4 hours. On a high-speed train, the time for the same trip is reduced by 62.5%. How many hours does the trip on the high-speed train take?

- A** 1.5 hours
- B** 2.5 hours
- C** 3.375 hours
- D** 3.625 hours

Reporting Category: 4 Real World Problem Solving

Performance Indicator: 8.4.spi.5 Solve real-world problems involving rate/time/distance (i.e., $d = rt$).

8 Mitchell and his parents drive to their favorite campsite every summer. The campsite is 282 miles away, and it takes them 6 hours to drive there. At what average speed do Mitchell and his parents drive to reach the campsite?

- F** 55 miles per hour
- G** 47 miles per hour
- H** 28 miles per hour
- J** 22 miles per hour

Reporting Category:

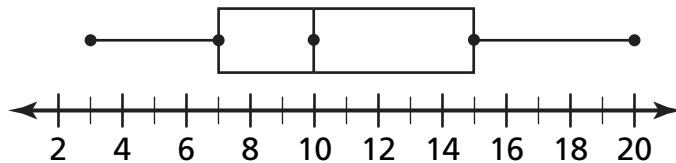
5 Data Analysis and Probability

Performance Indicator:

8.5.spi.2 Interpret appropriate graphical representations of data (i.e., histograms, box plots, scatterplots).

- 9** The box-and-whisker plot below shows the amount of time students at East Junior High School study each week.

Amount of Time Students Study



What percent of the students study at least 10 hours each week?

- A** 10%
- B** 25%
- C** 50%
- D** 75%

Reporting Category:

5 Data Analysis and Probability

Performance Indicator:

8.5.spi.7 Determine the median of a given set of real-world data (even number of data).

- 10** The ages of Sasha's cousins are listed below.

2, 5, 2, 5, 1, 6, 4, 7, 1, 6, 3, 6

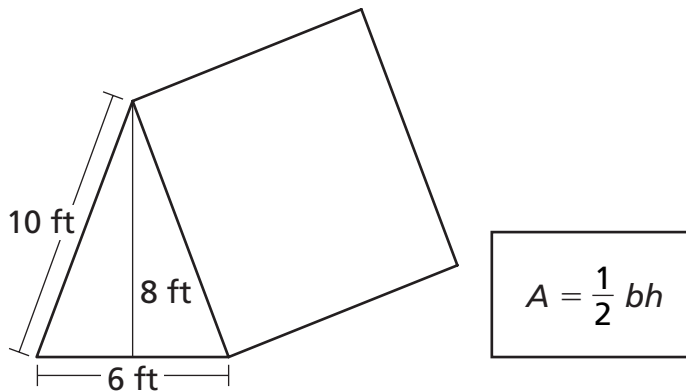
What is the median age of Sasha's cousins?

- F** 6
- G** 5.5
- H** 4.5
- J** 4

Reporting Category: 6 Measurement

Performance Indicator: 8.4.spi.4 Apply formulas to find the area of triangles, parallelograms, and trapezoids.

- 11** In the diagram below, the front of the tent forms an isosceles triangle.



What is the area of the triangle?

- A** 24 square feet
- B** 26 square feet
- C** 34 square feet
- D** 48 square feet

Reporting Category: 6 Measurement

Performance Indicator: 8.4.spi.2 Convert from one unit to another within the same system.

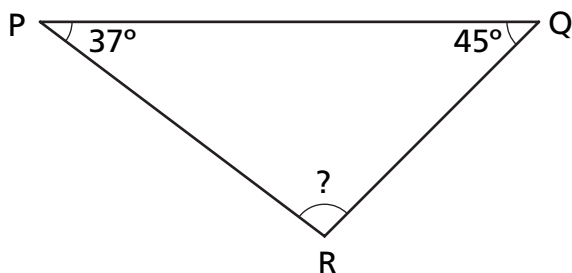
- 12** A popular notebook computer weighs 2.84 pounds. How many ounces does this computer weigh?

- F** 45.44 ounces
- G** 34.08 ounces
- H** 0.237 ounces
- J** 0.178 ounces

Reporting Category: 7 Geometry

Performance Indicator: 8.3.spi.5 Determine the measure of an angle of a triangle given the measures of the other two angles.

13 In the triangle below, what is the measure of angle R?

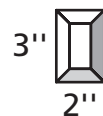
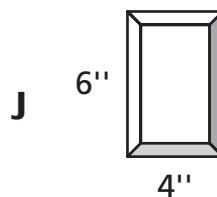
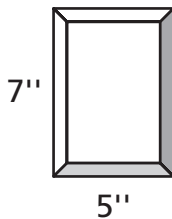
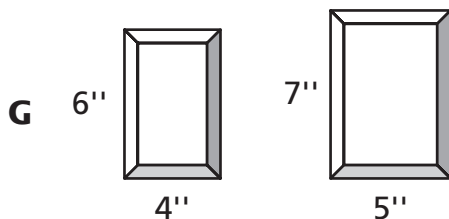
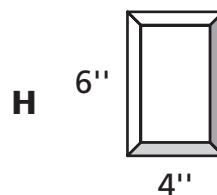
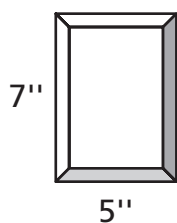
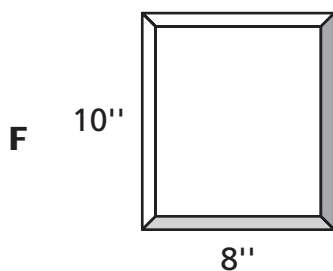


- A** 72° **B** 82° **C** 98° **D** 108°

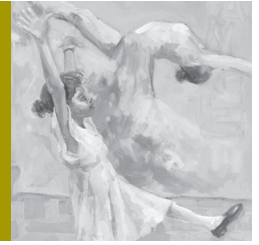
Reporting Category: 7 Geometry

Performance Indicator: 8.3.spi.4 Recognize similar geometric figures.

14 Carmen has a pair of similar picture frames on her fireplace mantle. Which pair of frames could be hers?



Science



Reporting Category: 1 Living Things and Their Environments

Performance Indicator: 8.2.spi.2 Identify the Earth's major biomes.

- 1** A particular biome supports plants with special adaptations for water storage. This biome often has a dry climate due to infrequent rain. The temperatures vary between extreme heat and extreme cold.

Which biome best fits this description?

- A** desert
- B** grassland
- C** taiga
- D** tundra

Reporting Category: 1 Living Things and Their Environments

Performance Indicator: 8.2.spi.4 Identify biotic and abiotic factors in a biome.

- 2** A certain species of fern lives on the forest floor in tropical rainforests.

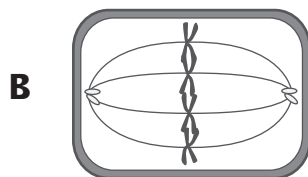
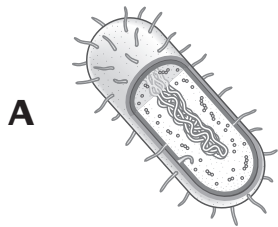
Which statement is an example of an abiotic factor affecting this species?

- F** animals using the fern as a food source
- G** amount of sunlight reaching the forest floor
- H** decaying vegetation in the soil providing nutrients
- J** other species of plants competing for available sunlight

Reporting Category:**2 Heredity and Reproduction****Performance Indicator:****8.4.spi.5 Select models or illustrations that are representations of DNA.**

3 Lucas is looking for a figure of a DNA molecule that he can use in a presentation.

Which figure should Lucas choose?

**Reporting Category:****2 Heredity and Reproduction****Performance Indicator:****8.4.spi.3 Differentiate between dominant and recessive traits.**

4 A new species of tropical plant has white or dark blue flowers. A plant with dark blue flowers is crossed with a plant that has white flowers.

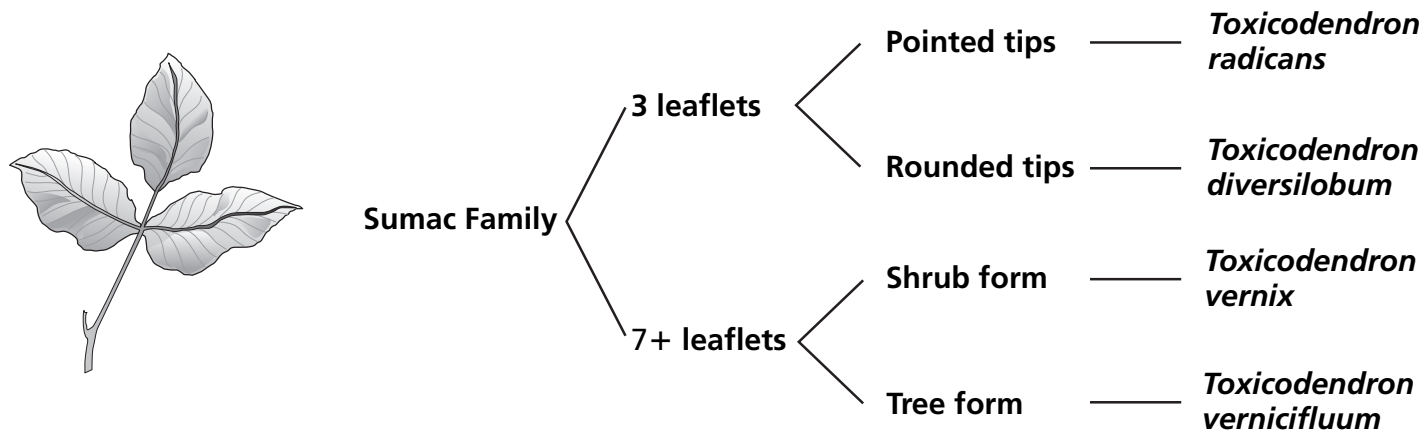
Which statement best explains why this crossing would produce light blue flowers?

- F** Blue is dominant to white.
- G** White is dominant to blue.
- H** Both white and blue are dominant.
- J** Neither white nor blue is dominant.

Reporting Category: 3 Diversity and Adaptation

Performance Indicator: 8.5.spi.5 Determine the genus and species of an organism using a dichotomous key.

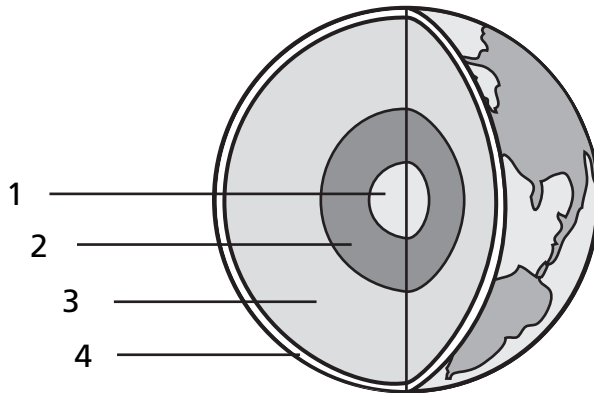
5 Look at this organism and its dichotomous key.



What is the genus and species of this organism?

- A** *Toxicodendron radicans*
- B** *Toxicodendron diversilobum*
- C** *Toxicodendron vernix*
- D** *Toxicodendron vernicifluum*

6 Look at the diagram of Earth's layers.



Which layer is the mantle?

F 1

G 2

H 3

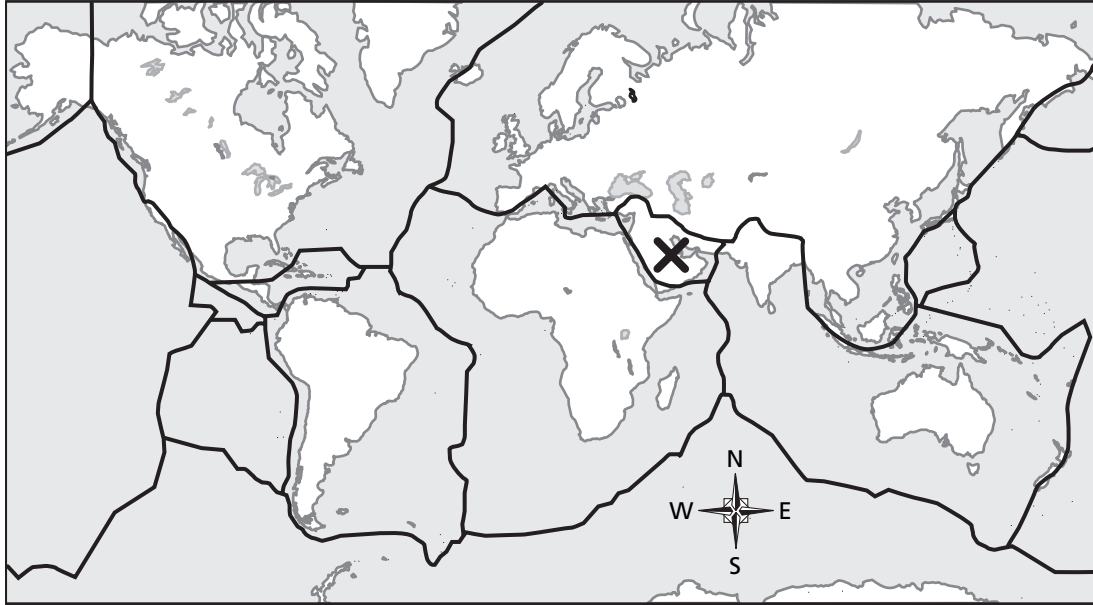
J 4

Reporting Category: 4 Earth Features

Performance Indicator: 8.9.spi.2 Identify the major plates of the world.

7 Look at this map.

Earth's Tectonic Plates



Which tectonic plate is indicated by an X on the map?

- A** African Plate
- B** Arabian Plate
- C** Eurasian Plate
- D** Indo-Australian Plate

Reporting Category: 5 Earth Resources

Performance Indicator: 8.10.spi.2 Distinguish between renewable and nonrenewable resources.

8 Which statement about renewable resources is true?

- F** Coal and water are both renewable resources.
- G** Water is a renewable resource, but coal is not.
- H** Minerals and oil are both renewable resources.
- J** Oil is a renewable resource, but minerals are not.

Reporting Category: 6 Forces and Motion

Performance Indicator: 8.11.spi.1 Recognize that forces cause changes in speed and/or the direction of motion.

9 All the forces acting on a moving bicycle are balanced when the bicycle is

- A** speeding up
- B** slowing down
- C** turning onto a side road
- D** traveling at a constant speed

Reporting Category: 6 Forces and Motion

Performance Indicator: 8.11.spi.2 Identify simple machines.

10 Look at this picture.



What type of simple machine is Angela using when she opens a can of paint?

- F** lever
- G** wedge
- H** inclined plane
- J** wheel and axle

- 11** Jeff and Oscar set up two similar chemical reactions. In both reactions the concentration of the starting reactants is 0.5 gram per liter. Jeff's reaction takes place at room temperature. Oscar's reaction takes place in an ice bath.

Which reaction will occur at a slower rate?

- A** Jeff's reaction because it is at a lower temperature.
- B** Jeff's reaction because it is at a higher temperature.
- C** Oscar's reaction because it is at a lower temperature.
- D** Oscar's reaction because it is at a higher temperature.

Social Studies



Reporting Category: 1 Economics

Performance Indicator: 8.2.spi.6 Interpret a variety of economic graphs and charts with topics (i.e., the Columbian exchange, numbers of slaves, population of colonies, population diversity).

Directions Use the table below and your own knowledge to do Number 1.

Columbian Exchange

	Old World	New World
Domesticated Animals	camel	llama
	cattle	turkey
	donkey	guinea pig
	horse	alpaca
Domesticated Plants	bananas	beans
	barley	cocoa
	coffee	peanuts
	rice	rubber

1 Which resource was not available in Pre-Columbian America?

- A** beans
- B** cattle
- C** rubber
- D** turkey

Reporting Category: 1 Economics

Performance Indicator: 8.2.spi.4 Recognize the economic activities of early America (i.e., agriculture, industry, and service).

2 Which type of work did most American colonists do for a living?

- F** farming
- G** mining
- H** shopkeeping
- J** manufacturing

Reporting Category: 2 Governance and Civics

Performance Indicator: 8.4.spi.4 Recognize the rights and responsibilities of individuals throughout the development of the United States.

3 Which of these is a voluntary duty of citizenship?

- A** paying taxes
- B** obeying laws
- C** serving on juries
- D** voting in elections

4

The most [strict] protection of free speech would not protect a man in falsely shouting "Fire!" in a theater and causing a panic.

—Oliver Wendell Holmes, Justice of the United States Supreme Court

In the quotation above, Justice Holmes is suggesting that

- F** people have the right to say anything they want
- G** freedom of speech must be balanced with the need for order
- H** the government should pass laws to limit what people can say
- J** freedom of speech is less important than other constitutional rights

Reporting Category: 3 Geography

Performance Indicator: 8.3.spi.2 Identify and use the key geographic elements on maps (i.e., island, flood plain, swamp, delta, marsh, harbor, cape, sea level, bay, prairie, desert, oasis, mesa, mountain, valley, glacier, canyon, cliff, plateau).

Directions Use the map below and your own knowledge to do Number 5.



5 What mountain range is shown on the map?

- A** Rocky Mountains
- B** Cascade Mountains
- C** Adirondack Mountains
- D** Appalachian Mountains

Reporting Category: 3 Geography

Performance Indicator: 8.3.spi.6 Recognize how topographical features such as mountain and river systems influenced the settlement and expansion of the United States (i.e., Cumberland Gap, Wilderness Road, Ohio and Tennessee river systems).

6 Which river played an important historical role in the settlement of the Northwest Territory?

- F** the Ohio River
- G** the Snake River
- H** the Columbia River
- J** the Sacramento River

Reporting Category: 4 U.S. History, Period 1 (Beginnings–1820)

Performance Indicator: 8.1.spi.3 Recognize the influence of science and technology on the development of early American colonial cultures (i.e., compass, shipbuilding, food storage, printing press, financial markets, weaponry, transportation).

7 Which of these allowed for the sharing of information and news throughout the colonies?

- A** the telegraph
- B** the telephone
- C** the pony express
- D** the printing press

Reporting Category: 4 U.S. History, Period 1 (Beginnings–1820)

Performance Indicator: 8.5.spi.4 Recognize causes and consequences of conflict (i.e., French and Indian, Revolutionary War, War of 1812).

8

British cruisers have been in the continued practice of violating the American flag on the great highway of nations, and of seizing and carrying off persons sailing under it.

—President James Madison

The event described above was one factor leading to the

- F** War of 1812
- G** American Revolution
- H** Lewis and Clark Expedition
- J** Emancipation Proclamation

Reporting Category: 5 U.S. History, Period 2 (1801–1877)

Performance Indicator: 8.5.spi.5 Recognize consequences of the westward expansion of the United States.

9 **The annexation of Texas by the United States led to**

- A** the Mexican War
- B** the Homestead Act
- C** the Indian Removal Act
- D** the Spanish-American War

10

On November 19, 1863, more than 50,000 people listened while President Abraham Lincoln spoke dedicating a battlefield cemetery at Gettysburg, Pennsylvania. Here is the beginning of Lincoln's address.

Four score and seven years ago our fathers brought forth on this continent a new nation, conceived in Liberty, and dedicated to the proposition that all men are created equal.

Now we are engaged in a great civil war, testing whether that nation, or any nation, so conceived and so dedicated, can long endure.

According to President Lincoln, why was the Civil War being fought?

- F** to gain resources
- G** to win independence
- H** to expand voting rights
- J** to hold the nation together

Answer Key

Reading and Language Arts

1	C
2	G
3	A
4	J
5	B
6	J
7	A
8	H

Mathematics

1	A
2	G
3	C
4	G
5	A
6	G
7	A
8	G
9	C
10	H
11	A
12	F
13	C
14	J

Science

1	A
2	G
3	C
4	J
5	A
6	H
7	B
8	G
9	D
10	F
11	C

Social Studies

1	B
2	F
3	D
4	G
5	A
6	F
7	D
8	F
9	A
10	J